

DRAFT -- DO NOT ENTER

AMENDMENTS TO THE CLAIMS

Claims 20-22 (Cancelled).

23. (Currently Amended) A machine for computing a property of a mathematically modelled physical system, the machine configured to perform the steps comprising:

a) reading, via a machine processing unit, input data including a value for each identified ordered coefficient of a first polynomial $p(x)$ representing said property, said polynomial $p(x)$ being expressed as $p(x) = \sum (P_j \cdot x^j)$ where $j = 0$ to n , a value of a quantity x , a value of a predetermined x_i , and a value of a predetermined $p(x_i)$ correspondingly paired with said predetermined x_i ;

b) building, via said machine processing unit, a value of a second polynomial $c(x)$ having ordered coefficients, said second polynomial $c(x)$ being expressible as: $c(x) = \sum (C_k \cdot x^k)$ where $k = 0$ to $(n-1)$ so that said first polynomial $p(x)$ is expressible as: $p(x) = p(x_i) + \{x - x_i\} \cdot c(x)$, comprising the steps of:

i) determining, via said machine processing unit, a value for each ordered coefficient of said second polynomial $c(x)$ by generating a plurality of machine processing unit signals to determine each said ordered coefficient of said second polynomial $c(x)$ from: $C_k = \sum (P_{(k+1+j)} x_i^j)$ where $j = 0$ to $(n-1-k)$;

ii) determining, via said machine processing unit, a value of said second polynomial $c(x)$ by generating a plurality of machine processing unit signals to determine: $c(x) = \sum (C_k \cdot x^k)$ where $k = 0$ to $(n-1)$;

c) constructing, via said machine processing unit, a value of said first polynomial $p(x)$ by generating a plurality of machine processing unit signals to determine: $p(x) = p(x_i) + \{x - x_i\} \cdot c(x)$; and

d) outputting, via said machine-processing unit, said value of the first polynomial $p(x)$ representing said property of the mathematically modelled physical system.